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10/770,707	02/04/2004	Toshihiro Suzuki	248499US8	1311
22850 7590 08/08/2007 OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER SAMUEL, DEWANDA A	
			ART UNIT 2616	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

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<b>Office Action Summary</b>	Application No. 10/770,707	Applicant(s) SUZUKI ET AL.	
	Examiner DeWanda Samuel	Art Unit 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 04 February 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 February 2004 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>See Continuation Sheet</u> | 6) <input type="checkbox"/> Other: _____  |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date  
:02/04/2004,,06/18/2007,07/16/2007.

## DETAILED ACTION

### *Claim objection*

1. **Claim 2** objected to because of the following informalities: "further comprising a network management server, wherein the mobile node comprises". Appropriate correction is required.

**Claim 3** objected to because of the following informalities: "further comprising a network management server, wherein the destination access node comprises". Appropriate correction is required.

**Claim 10** objected to because of the following informalities: "further comprising a network management server, wherein the mobile node comprises". Appropriate correction is required.

**Claim 11** objected to because of the following informalities: "further comprising a network management server, wherein the source access node comprises". Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. **Claim 5** is rejected under 35 U.S.C. 102(e) as being anticipated by Inoue et al (US Patent 6,515,974).

**With regard to claim 5**, Inoue et al. discloses having a *network management server in a mobile communication network for transferring a packet to a destination mobile terminal connected to a mobile node via a radio link, the mobile node being connected to a destination access node via a radio link*; Inoue et al. discloses having a DHCP server in fig.4 ("network management server")... the mobile terminal 3 comes into the private network 1 of the communication service provider. The is case where the private network 1 is an radio accessible network and the mobile terminal 3 has the interface that is automatically switched from wire to radio when the mobile terminal 3 enters into the radio zone and makes the connection to the private network 1("radio link", column 11 line 1-8 and fig 4)...in fig. 4 mobile terminal 3 is connected to a Haddr-g ( home agent, " destination access node"). However, Inoue does not disclose

*the server comprising: an address manager configured to manage a first address, a second address and a third address of the destination mobile terminal in accordance with address assignment information received from the destination access node*; Inoue et al. discloses having a internet home agent 6 ( "destination access node") is comprised of a DHCP server whereby allocating a home address Haddr-g to the mobile

terminal 3... also information on a pair home address Haddr-g ( "third address") and the private network –side address Haddr-p ( "second address"). Inoue et al. further discloses having a internet home agent 6 ( "destination access node" column 11 line 21-32 ).

*and an address assignment direction transmitter configured to transmit an address assignment direction, the address assignment direction directing a source access node to which a source mobile terminal is connected via radio link to manage the first address and the second address of the destination mobile terminal.* Inoue et al. discloses having a packet relay device 4 ("address assignment direction transmitter") in which exchange messages that contains pair information( e.g. addresses) for the mobile terminal 3 ("destination mobile terminal", column 11 line 60-63). Inoue et al. further discloses having a home agent 5 ( "soyurce access node") that manges the home address ( "first address") and the care-of-address ( "second address") within the visiting network for the mobile terminal 3 ( "new mobile terminal", column 13 line 25-33). It is inferred the home agent 5 ("source access node") is capable of managing the address of the mobile terminal 3 within the home network.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject

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matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. **Claims 1-3** are rejected under 35 U.S.C. 103(a) as being unpatentable over

Inoue et al. (US Patent 6,515,974) in view of Watanuki et al. (PG PUB 2002/0159478).

**With regard to claim 1**, Inoue et al. discloses having a *mobile communication control system having a plurality of access nodes and a mobile node, wherein a source access node to which a source mobile terminal is connected via a radio link*; Inoue discloses having a plurality of private network home agents 5 and a Internet home agent 6 ( access node”) and mobile terminals (“mobile node”) in which the HA-p1 ( home agent , “source access node”) is connected to mobile terminal 3 connected via private network 1-1 ( column 18 line 4-15 and fig. 18).

*comprises: an address manager configured to manage a first address and a second address of a destination mobile terminal connected to the mobile node via a radio link; an address changer configured to change a destination address in a packet transmitted from the source mobile terminal, from the first address of the destination mobile*

*terminal to the second address of the destination mobile terminal; Inoue et al. discloses having a private network home agent 5 ("access node") with a home management unit 51 ("address manger") for managing home address of the mobile terminal and a current location address management unit 52 ("address changer") for managing the current location address of the mobile terminal ( column 19 line 36-44). Inoue further discloses where the private network 1 is a radio accessible network and the mobile terminal 3 has the interfaces that is automatically switched from wire to radio when mobile terminal enters a radio zone (column 11 line 1-6).*

*and a router configured to route the packet to a destination access node to which the mobile node is connected via a radio link, in accordance with the changed destination address ; Inoue et al. discloses having encapsulation and transfer unit 53 for transferring packets by encapsulating them appropriately ( column 19 line 40-42). Inoue et al. further discloses the encapsulated packet has the ID of the mobile terminal 3 ("mobile node") and the selection of the appropriate home agent ("destination access node") is carried out at the private 1-2 side by using this mobile ID ( column 18 line 51-65).*

*the destination access node comprises: an address manager configured to manage the second address and a third address of the destination mobile terminal; an address changer configured to change the destination address in the received packet, from the second address of the destination mobile terminal to the third address of the destination mobile terminal; and a router configured to route the packet to the mobile node in accordance with the changed destination address; Inoue et al. discloses having*

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a internet home agent 6 ( "destination access node") connected to a DHCP server whereby allocating a home address Haddr-g to the mobile terminal 3... also information on a pair home address Haddr-g ( "third address") and the private network -side address Haddr-p 5 ( "second address", column 11 line 21-32 ). Inoue et al. further discloses having a internet home agent 6 ( "destination access node") with a home management unit 51 ( "address manager") for managing home address of the mobile terminal and a current location address management unit 52 ( "address changer") for managing the current location address of the mobile terminal ( column 19 line 36-44).

*and the mobile node comprises: an address manager configured to manage the first address and the third address of the destination mobile terminal; an address changer configured to change the destination address in the received packet, from the third address of the destination mobile terminal to the first address of the destination mobile terminal; and a packet transmitter configured to transmit the packet to the destination mobile terminal in accordance with the changed destination address.* Inoue et al. discloses having a mobile terminal 3 ("mobile node"). However, Inoue et al. does not explicitly discloses having an address manager configured to manage the first address and the third address of the destination mobile terminal; an address changer configured to change the destination address in the received packet, from the third address of the destination mobile terminal to the first address of the destination mobile terminal; and a packet transmitter configured to transmit the packet to the destination mobile terminal in accordance with the changed destination address. Watanuki et al. discloses having a ipv4/v6 mobile node ( "mobile node") comprised of a movement status table 119

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("address manager") which is updated when there is movement register process 60 ( page paragraph 140 line 1-18)...also the movement process portion 114 is configured to send out movement detection message which includes the new address destination address ( page 7 paragraph 126-136 and fig. 1). In addition, Watanuki et al. discloses having Ipv6 packet transmission portion 113 ( "packet transmitter") thereby transmitting packets for the Ipv4/v6 mobile node who has move to a new network and the packets are destined for a new network address which is encapsulated in the header of the packet ( page 9 paragraph 172-181).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have a mobile terminal 3 ("mobile node") as taught by Inoue et al. with a movement status table 119 which manages the addresses of the mobile node and the home agent, movement process portion 114 is configured to send out movement detection message which includes the new address destination address, and Ipv6 packet transmission portion 113 as taught by Watanuki et al. to provide a mobile node that assisted in the movement between IP networks.

**With regard to claim 2**, in combination Inoue et al. and Watanuki et al. teaches the mobile communication control system recited in claim 1. *further comprising a network management server, wherein the mobile node comprises an address assignment information transmitter configured to transmit address assignment information for a new mobile terminal to the network management server in accordance with an address assignment request transmitted from the new mobile terminal*; Inoue et al. discloses having a mobile terminal 3 ("mobile node")... a DHCP server in fig. 4

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("network management server") allocating a new home address (e.g. Haddr-p) to the mobile terminal as it moves to the new network (e.g. Internet 2, column 11 line 21-33). However, Inoue et al does not explicitly disclose the mobile node comprises an address assignment information transmitter configured to transmit address assignment information for a new mobile terminal. Watanuki et al. discloses having a IPv6 movement registration processing portion 116 which sends address within a movement registration request message issued by a manual setting of the DHCP (page 8 paragraph 153-154).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have a mobile terminal 3 ("mobile node") as taught by Inoue et al. with a manual setting of the DHCP thereby assigning address as taught by Watanuki et al. to provide a mechanism that will keep track of the mobile terminal in the network.

*the network management server comprises: an address manager configured to manage a first address, a second address and a third address of the new mobile terminal in accordance with the received address assignment information; Inoue et al. discloses having a DHCP server 27 in fig. 4 ("network management server") a manages the home address (e.g. Haddr-p, "first address") for the mobile terminal 3 the new network address Haddr-g ("second address") and care of address ("third address") for the mobile terminal (column 12 line 50-67).*

*and an address assignment direction transmitter configured to transmit an address assignment direction for the new mobile terminal to the source access node and the*

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*destination access node*; Inoue et al. discloses having a packet relay device 4 ("address assignment direction transmitter") that is configured to transmit the home agent ( Haddr-p) address ( " source access node") and home agent ( Haddr-g) address ("destination access node") for the mobile terminal 3 ( column 11 line 44-51).

*and the address manager of the source access node manages the first address and the second address of the new mobile terminal in accordance with the address assignment direction*; Inoue et al. discloses having a home agent 5 (" source access node") that manages the home address ( "first address") and the care-of-address ( "second address") within the visiting network for the mobile terminal 3 ( "new mobile terminal", column 13 line 25-33). It is inferred the home agent 5 ("source access node") is capable of managing the address of the mobile terminal 3 within the home network.

*and the address manager of the destination access node manages the second address and the third address of the new mobile terminal in accordance with the address assignment*; Inoue et al. discloses having a home agent 6 ("destination access node") in the visiting network that manages a care-of- address ("second address") and the home address of the visiting home agent 6 ( Haddr-g, column 14 line 3-6). It is inferred the home agent 6 ("destination access node") is capable of managing the address of the mobile terminal 3 within the visiting network.

**With regard to claim 3**, in combination Inoue et al. and Watanuki et al. teaches the mobile communication control system recited in claim 1. *further comprising a network management server, wherein the destination access node comprises an*

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*address assignment information transmitter configured to transmit address assignment information for the destination mobile terminal connected to the mobile node to the network management server in accordance with an address assignment request transmitted from the mobile node;* Inoue et al. discloses DHCP server ("network management server")...in fig. 5 a home agent 6 ("destination access node")...the home agent 6 ("destination access node") carries out the usual mobility binding generation (sets the care-of address= CoA-g as the bind of the home address=Haddr-g). It is inferred the home agent 6 is capable of transmitting assigned addresses

*the network management server comprises: an address manager configured to manage a first address, a second address and a third address of the destination mobile terminal in accordance with the received address assignment information;* Inoue et al. discloses having a DHCP server 27 in fig. 4 ("network management server") a manages the home address (e.g. Haddr-p, "first address") for the mobile terminal 3 the new network address Haddr-g ("second address") and care of address ("third address") for the mobile terminal (column 12 line 50-67).

*and an address assignment direction transmitter configured to transmit an address assignment direction for the destination mobile terminal to the source access node;* Inoue et al. discloses having a packet relay device 4 ("address assignment direction transmitter") in which exchange messages that contains pair information for the mobile terminal 3 ("destination mobile terminal", column 11 line 60-63)...the pair information the home address Haddr-g and the private network side address Haddr-p is notified to the

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Internet home agent (HA-g) 6. The Internet home agent (HA-g) 6 also notifies this pair information to private network home agent (HA-p, "source access node") 5 through the packet relay device 4 ("address assignment direction transmitter", column 11 line 25-33).

*and the address manager of the source access node manages the first address and the second address of the destination mobile terminal in accordance with the address assignment direction.* Inoue et al discloses having a home agent manages a home address (first address") and a care-of-address ( "second address") of the mobile terminal 3 ("mobile terminal", column 10 line 6-14).

7. **Claim 4** is rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue et al. ( US Patent 6,515,974) in view of Leung ( US Patent 6,636,498).

**With regard to claim 4**, Inoue et al. discloses having a *network management server in a mobile communication network for transferring a packet to a destination mobile terminal connected to a mobile node via a radio link, the mobile node being connected to a destination access node via a radio link*, Inoue et al. discloses having DHCP server ("network management server") in fig.4 in a Internet network ("mobile communication network")...the DHCP server ("network management server") connected to the mobile terminal ( "destination mobile terminal")...the mobile terminal 3 ( "mobile node") connected to the home agent 5 ( "destination access node", fig. 4). However, Inoue et al. does not explicitly disclose mobile node being connected to a destination

access node via a radio link. Leung discloses having a mobile router ( "mobile node") in a Mobile IP environment 202... the mobile router ( "mobile node") is connected to a foreign agent 212 ( "destination access node", fig 2A-4) via link .

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have a DHCP a server as taught by Inoue et al. with a mobile router ("mobile node") linked to a foreign agent 212 ( "destination access node") as taught by Leung to provide a system to support a Mobile IP system.

*the server comprising: an address manager configured to manage a first address, a second address and a third address of the destination mobile terminals in accordance with address assignment information received from the mobile node; Inoue et al. discloses having a DHCP server 27 in fig. 4 ( "network management server") a manages the home address ( e.g. Haddr-p, "first address") for the mobile terminal 3 the new network address Haddr-g ( "second address") and care of address ( "third address") for the mobile terminal ( column 12 line 50-67).*

*and an address assignment direction transmitter configured to transmit an address assignment directions for directing a source access node to manage the first address and the second address of the destination mobile terminal, and to transmit an address assignment direction for directing the destination access node to manage the second address and the third address of the destination mobile terminal, a source mobile terminal being connected to the source access node via radio link. Inoue et al. discloses*

having a packet relay device 4 ("address assignment direction transmitter") in which exchange messages that contains pair information for the mobile terminal 3 ("destination mobile terminal", column 11 line 60-63)...the pair information the home address Haddr-g and the private network side address Haddr-p is notified to the Internet home agent (HA-g) 6. The Internet home agent (HA-g) 6 also notifies this pair information to private network home agent (HA-p, "source access node") 5 through the packet relay device 4 ("address assignment direction transmitter", column 11 line 25-33). Inoue further discloses a mobile terminal ("source mobile terminal") connected to a private network home agent 5 ("source access node") in fig. 4.

8. **Claims 6 and 7** are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanuki et al. (PG PUB 2002/0159478) in view of Leung (US Patent 6,636,498) and Momona (US Patent 7,203,492).

**With regard to claim 6**, Watanuki et al. discloses having a *mobile node in a mobile communication network for transferring a packet from a source mobile terminal to a destination mobile terminal, the source mobile terminal being connected to a source access node via radio link, the destination mobile terminal being connected to the mobile node via a radio link, the mobile node being connected to a destination access node via a radio link*, Watanuki et al. discloses having a IPv4/v6 mobile node 106 ("mobile node") in a network system 1 which includes a LAN (local area network) connected to a WAN (wide area network, page 5 paragraph 82 line 1-6). Watanuki et

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al. further discloses having a IPv6 packet transmission portion that transfer packet IPv6 packets via IPv6 node ("source mobile terminal") to a IPv4 node ("destination mobile terminal") via IPv4 network page 10 paragraph 194-195). In fig 1 Watanuki et al. discloses having IPv6 node 104 ("source access node") connected to a IPv6 mobile agent ("source access node"). However, Watanuki et al. does not discloses the destination mobile terminal being connected to the mobile node via a radio link, the mobile node being connected to a destination access node via a radio link. Leung discloses having a mobile router ("mobile node") in a Mobile IP environment 202... the mobile router ("mobile node") is connected to a node ("mobile terminal")...the mobile router ("mobile node") is connected to a foreign agent 212 ("destination access node", fig 2A-4).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have a IPv4/v6 mobile node 106 ("mobile node") as taught by Watanuki et al. connected to a node ("mobile terminal") and the mobile router ("mobile node") connected to foreign agent 212 ("destination access node") as taught by Leung to provide a system to support a Mobile IP system.

*the node comprising: an address manager configured to manage a first address and a third address of the destination mobile terminal; an address changer configured to change a destination address in the packet transmitted from the source access node, from the third address of the destination mobile terminal to the first address of the destination mobile terminal; Watanuki et al. discloses having a Ipv4/v6 mobile node ("mobile node") comprised of a movement status table 119 ("address manager") which*

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is updated when there is movement register process 60 ( page paragraph 140 line 1-18)...also the movement process portion 114 is configured to send out movement detection message which includes the new address destination address ( page 7 paragraph 126-136 and fig. 1). In addition, Watanuki et al. discloses having Ipv6 packet transmission portion 113 ( "packet transmitter") thereby transmitting packets for the Ipv4/v6 mobile node who has move to a new network and the packets are destined for a new network address which is encapsulated in the header of the packet ( page 9 paragraph 172-181).

*a packet transmitter configured to transmit the packet to the destination mobile terminal in accordance with the changed destination address;* Watanuki et al. discloses having a IPv4/v6 mobile node 106 fig.1 with a IPv6 packet transmitter 113 ("packet transmitter")

*an address assignment information transmitter configured to transmit address assignment information including the first address and the third address of a new mobile terminal to a network management server in accordance with an address assignment request transmitted from the new mobile terminal.* Watanuki et al. discloses having a IPv4/v6 mobile node 106 ("mobile node")... IPv4/v6 mobile node 106 ("mobile node") acquire an address from the DHCP server ( "network management server", page 8 paragraph 146). However, Watanuki et al. does not discloses having address assignment information transmitter configured to transmit address assignment information including the first address and the third address of a new mobile terminal to a network management server in accordance with an address assignment request transmitted from the new mobile terminal. Momona discloses having a mobile

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communication and method (title)... two mobile nodes MN-1 and MN-2 (column 5 line 55 and fig.1)... the mobile node has a location registration unit 121 ("address assignment information transmitter", fig.1) that registers its current location with the HA1 and stores a care-of-address ("third address") assigned by the visited domain into the address management table (column 6 line 30-36).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have a IPv4/v6 mobile node 106 ("mobile node") and ("network management server") as taught by Watanuki et al. with a location registration unit 121 registering address to a home agent as taught by Momona to provide a technique that will allow other devices within the network know the location of the mobile node.

**With regard to claim 7**, in combination Watanuki et al. , Leung and Momona teaches the mobile node recited in claim 6. *further comprising an address assignment request transmitter configured to transmit an address assignment request for mobile terminals connected to the mobile node to a second access node, when the mobile node enters an area managed by the second access node different from a first access node to which the mobile node is connected at the moment.* Watanuki et al. discloses having an IPv4/v6 mobile node 106. However, Watanuki et al. does not explicitly disclose having a address assignment request transmitter configured to transmit an address assignment request for mobile terminals connected to the mobile node to a second access node, when the mobile node enters an area managed by the second access node different from a first access node to which the mobile node is connected at

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the moment. Leung discloses having a Mobile IP mobile router (mobile node") connected to a node such as node 1 217 (" mobile terminal", column 6 line 14-19)...each network device is assigned a unique IP address ...a home agent ("address assignment request transmitter", column 6 line 11-30) ...the home agent is configured to have permanent registration for each fixed node...as the mobile router 20 may support multiple nodes 22,24,26 which may be fixed with respect to the mobile router 20 ( column 2 line 52-67). It is inferred the home agent maintained the nodes connected to the mobile route.

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to IPv4/v6 mobile node 106 as taught by Wantanuki et al. attached to a home agent ("address assignment request transmitter") requesting a node ("mobile terminal ") addresses associated with the mobile router (" mobile node") as taught by Leung to provide a managing mechanism for node addresses associated with a mobile router.

9. **Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over Momona ( US Patent 7,203,492) in view of Inoue et al. ( US Patent 7,020,120).

**With regard to claim 8**, Momona disclose having an *access node in a mobile communication network for transferring a packet to a destination mobile terminal connected to a mobile node via a radio link, the mobile node being connected to the access node via a radio link*, Momona discloses having a home agents HA1, HA2, and

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HA3 ("access node") in a mobile communication system routing packets to and from mobile nodes MN1, MN2 and MN3 ( column 9 line 35-50)... the mobile node MN1 is connected to the home agent (Fig. 13).

*the node comprising: an address manager configured to manage a second address and a third address of the destination mobile terminal connected to the mobile node via a radio link;* Momona discloses having a home agent ("access node") with a address mapping table 235 includes a home local multicast address (HLMC) , a foreign local multicast address and a foreign local multicast address (column 11 line 15-20).

*an address changer configured to change a destination address in the packet transmitted from a source access node, from the second address of the destination mobile terminal to the third address of the destination mobile terminal, a source mobile terminal being connected to the source access node via a radio link;* Momona discloses having a home agent (HA1) receiving packets and mapping the addresses that located inside the encapsulated packet, the foreign local multicast address is retrieved and sent the that location ( column 12 line 5-25).

*a router configured to route the packet to the mobile node in accordance with the changed destination address;* Momona disclose having routers 205,206, and 207 provided in the visited domain 204 for routing packets to and from mobile nodes ( column 9 line 48-50).

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*and an address assignment information transmitter configured to transmit address assignment information including the second address and the third address of the destination mobile terminal to a network management server in accordance with an address assignment request transmitted from the mobile node.* Momona discloses having a mobile communication and method (title)...two mobile nodes MN-1 and MN-2 (column 5 line 55 and fig.1)...the mobile node has a location registration unit 121 ("address assignment information transmitter", fig.1) that registers its current location with the HA1 and stores a care-of-address ("third address") assigned by the visited domain into the address management table (column 6 line 30-36). However, Momona does not explicitly disclose having a network management server. Inoue et al. discloses having a DHCP server 7 in which it provides an address to the mobile computer (column 7 line 49-54).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have a location registration unit 121 ("address assignment information transmitter") as taught by Momonoa transmitting addresses to a DHCP server as taught by Inoue et al. to efficiently manage all the mobile terminals within the network.

**10. Claim 9** is rejected under 35 U.S.C. 103(a) as being unpatentable over Hancock (GB 2377862 A) in view of Soliman et al. ("Hierarchical MIPv6 mobility management (HMIPv6)", 2002) and Watanuki et al. (PG PUB 2002/0159478).

**With regard to claim 9**, Hancock discloses having a *mobile communication control system having a plurality of access nodes, an anchor node and a mobile node, wherein a source access node to which a source mobile terminal is connected via a radio link comprises: an address manager configured to manage a first address and a second address of a destination mobile terminal connected to the mobile node via a radio link*; Hancock discloses having a communication network 1 including a access nodes or routers 5 –7, anchor nodes 8 and 9 and mobile nodes 4 ( Abstract and page 2 line 23-26)...the access router 5 and 7 ( “access node”) is connected to mobile node 4 ( page 3 line 1-3)...the access router 5 and 6 manages address a fist address and second address for the mobile node 4( “mobile terminal”, page 4 line 6-7).

*an address changer configured to change a destination address in a packet transmitted from the source mobile terminal, from the first address of the destination mobile terminal to the second address of the destination mobile terminal*; Hancock discloses the access router 5 changes the mobile node 4 ( “mobile terminal”) address when it attaches the network ( page 4 line 5-8). It is inferred the access router 5 has the capability to change addresses for the mobile node 4.

*and a router configured to route the packet to the anchor node in accordance with the changed destination address*; Hancock discloses having a access router 5 and 6 in which routes packet for the mobile node 4 to the anchor node 8with the change address ( page 4 line 6-10).

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*the anchor node comprises: an address manager configured to manage the second address and a third address of the destination mobile terminal and encapsulation information for specifying the mobile node; an address changer configured to change a destination address in the packet transmitted from the source access node,* Hancock et al. discloses having a anchor node 8 and 9 in fig. 1... also the anchor node 8 encapsulates packets for the mobile node 4 ( "mobile node", page 4 line 10-12). However, Hancock et al. does not explicitly disclose an address manager configured to manage the second address and a third address of the destination mobile terminal; an address changer configured to change a destination address in the packet transmitted from the source access node. Soliman discloses having a MAP ( mobile anchor point) allocating the mobile node a RcoA ("second address") and LcoA addresses ( "third address" ,page 15 paragraph 6.1 line 3-4).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have anchor node 8 as taught by Hancock et al. allocating a RcoA ("second address") and LcoA addresses ( "third address") as taught by Soliman to easily manage addresses that are local to visiting network.

*from the second address of the destination mobile terminal to the third address of the destination mobile terminal, and to encapsulate the packet using the encapsulation information;* Hancock et al. discloses having a anchor node 8 and 9 in fig. 1... also the anchor node 8 encapsulates packets for the mobile node 4 ( "mobile node", page 4 line 10-12). However, Hancock et al. does not explicitly disclose an address manager configured to manage the second address and a third address of the destination mobile

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terminal; an address changer configured to change a destination address in the packet transmitted from the source access node. Soliman discloses having a MAP ( mobile anchor point) allocating the mobile node a RcoA ("second address") and LcoA addresses ( "third address",page 15 paragraph 6.1 line 3-4).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have anchor node 8 as taught by Hancock et al. allocating a RcoA ("second address") and LcoA addresses ( "third address") as taught by Soliman to easily manage addresses that are local to visiting network.

*and a router configured to route the packet to a destination access node in accordance with the encapsulation information, the mobile node being connected to the destination access node via a radio link;* Hancock et al. discloses having a anchor node 8 encapsulate packets for the mobile node 4 and route them to the access router 5 ( "destination access node", page 4 line 10-13)...also the mobile node 4 is connected to the access router ( "destination access node", fig. 1).

*the destination access node comprises: an address manager configured to manage the encapsulation information;* Hancock et al. discloses having a access router 8 ("destination access router") that is capable of handling a the source and destination address encapsulated in the packet ( page 4 line 11-17).

*and a router configured to deencapsulate the received packet, and to route the packet to the mobile node specified by the encapsulation information encapsulated in the packet, when the packet includes the third address of the destination mobile*

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*terminal*; Hancock et al. discloses having a access router 8 ( " router") is configured to de-encapsulate the received packet and route to the mobile node 4 the encapsulated packet includes a the destination address of the mobile node ( page 4 line 11-16).

*and the mobile node comprises: an address manager configured to manage the first address and the third address of the destination mobile terminal; an address changer configured to change a destination address in the received packet, from the third address of the destination mobile terminal to the first address of the destination mobile terminal; and a packet transmitter configured to transmit the packet to the destination mobile terminal in accordance with the changed destination address.* Hancock et al. discloses having a mobile node 4 in fig. 1 and is allocated an address when attached to a network ( page 4 line 6-8). However, Hancock et al. does not explicitly disclose address manager configured to manage the first address and the third address of the destination mobile terminal; an address changer configured to change a destination address in the received packet, from the third address of the destination mobile terminal to the first address of the destination mobile terminal; and a packet transmitter configured to transmit the packet to the destination mobile terminal in accordance with the changed destination address. Watanuki et al. discloses having a Ipv4/v6 mobile node ( "mobile node") comprised of a movement status table 119 ("address manager") which is updated when there is movement register process 60 ( page paragraph 140 line 1-18)...also the movement process portion 114 is configured to send out movement detection message which includes the new address destination address ( page 7 paragraph 126-136 and fig. 1). In addition, Watanuki et al. discloses having Ipv6

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packet transmission portion 113 ( "packet transmitter") thereby transmitting packets for the Ipv4/v6 mobile node who has move to a new network and the packets are destined for a new network address which is encapsulated in the header of the packet ( page 9 paragraph 172-181).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have a mobile node 4 as taught by Hancock et al. with a movement status table 119 which manages the addresses of the mobile node and the home agent, movement process portion 114 is configured to send out movement detection message which includes the new address destination address, and Ipv6 packet transmission portion 113 as taught by Watanuki et al. to provide assistance to a mobile node in the movement between IP networks.

**11. Claim 10** is rejected under 35 U.S.C. 103(a) as being unpatentable over Hancock ( GB 2377862 A) and Soliman et al. ("Hierarchical MIPv6 mobility management (HMIPv6)", 2002) and Watanuki et al. (PG PUB 2002/0159478) as applied to claim 9 and in further view of Momona (US Patent 7,203,492).

**With regard to claim 10**, in combination Hancock et al., Soliman and Watanuki et al. teaches the mobile communication control system recited in claim 9. *further comprising a network management server, wherein the mobile node comprises an address assignment information transmitter configured to transmit address assignment information for a new mobile terminal to the network management server in accordance*

*with an address assignment request transmitted from the new mobile terminal; Hancock discloses having a communication network comprises a access network 2 includes mobile node 4 ("mobile node" fig. 1). However, Hancock does not explicitly disclose having a network management server and a mobile node comprises an address assignment information transmitter configured to transmit address assignment information for a new mobile terminal to the network management server in accordance with an address assignment request transmitted from the new mobile terminal. Momona discloses having a mobile communication and method (title)... two mobile nodes MN-1 and MN-2 (column 5 line 55 and fig. 1)... the mobile node has a location registration unit 121 ("address assignment information transmitter", fig. 1) that registers it current location with the HA1 and stores a care-of-address (" third address") assigned by the visited domain into the address management table ( column 6 line 30-36).*

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have a IPv4/v6 mobile node 106 ("mobile node") and ("network management server") as taught by Watanuki et al. with a location registration unit 121 registering address to a home agent as taught by Momona to provide a technique that will allow other devices within the network know the location of the mobile node.

Hancock does not disclose having a *network management server comprises: an address manager configured to manage a first address, a second address and a third address of the new destination mobile terminal and the encapsulation information, in accordance with the received address assignment information; Inoue et al. discloses*

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having a address management server or DCHP server utilizing moving detection processes whereby managing the different addresses for the mobile computer 2 as it move from different networks ( column 11 line 55-67 and column 12 line 1-67).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have a communication network comprises a access network 2 as taught by Hancock address management server or DCHP server managing the different address for the mobile computer 2 as taught by Inoue et al. to provide a mechanism that will efficiently mange every address the mobile computer will receive while in the network.

*and an address assignment direction transmitter configured to transmit an address assignment direction for the new mobile terminal to the source access node and the anchor node;* Hancock discloses having a anchor node 8 ("anchor node"). However, Hancock does not discloses and an address assignment direction transmitter configured to transmit an address assignment direction for the new mobile terminal to the source access node and the anchor node. Inoue et al. discloses having a DCHP server 7 that sends a address through a DCHPREQUEST message (column 13 line 25-33). It is inferred the DCHP have the capability to transmit the mobile computer address.

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have a communication network 1 with a anchor node 8 as taught by Hancock with a DCHP server 7 transmitting address request as taught by Inoue et al. to provide a mechanism that will efficiently manages

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*the address manager of the source access node manages the first address and the second address of the new mobile terminal in accordance with the address assignment direction; Hancock discloses having an access router 5-7 ("source access node")...the access router allocates the mobile node a address ("first address") when it attaches to the network and the address of mobile node 4 ( page 4 line 6-8).*

*and the address manager of the anchor node manages the second address and the third address of the new mobile terminal and the encapsulation information, in accordance with the address assignment direction. Hancock discloses having a anchor nodes 8 and 9 ("anchor node") manages source and address ( "second address") and a destination address ("third address") and the encapsulated information in the packet ( page 4 line 14-24).*

**12. Claim 10** is rejected under 35 U.S.C. 103(a) as being unpatentable over Hancock ( GB 2377862 A) and Soliman et al. ("Hierarchical MIPv6 mobility management (HMIPv6)", 2002) and Watanuki et al. (PG PUB 2002/0159478) as applied to claim 9 and in further view of Inoue et al. ( US Patent 7,020,120).

**With regard to claim 11**, in combination Hancock et al., Soliman and Watanuki et al. teaches the mobile communication control system recited in claim 9. *further comprising a network management server, wherein the source access node comprises an address assignment information transmitter configured to transmit address*

*assignment information including the encapsulation information to the network management server in accordance with an address assignment request transmitted from the mobile node*; Hancock discloses having an access router 5-7 ("source access node")...the access router allocates the mobile node a address ("first address") when it attaches to the network and the address of mobile node 4 ( page 4 line 6-8). However, Hancock does not disclose the encapsulation information to the network management server in accordance with an address assignment request transmitted from the mobile node.

Hancock does not disclose having a *network server comprises: an address manager configured to manage the first addresses, the second addresses and the third addresses of the destination mobile terminal and the encapsulation information, in accordance with the received address assignment information*; Inoue et al. discloses having a address management server or DHCP server utilizing moving detection processes whereby managing the different addresses for the mobile computer 2 as it move from different networks ( column 11 line 55-67 and column 12 line 1-67).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have a communication network comprises a access network 2 as taught by Hancock address management server or DHCP server managing the different address for the mobile computer 2 as taught by Inoue et al. to provide a mechanism that will efficiently mange evey address the mobile computer will receive while in the network:

*and an address assignment direction transmitter configured to transmit an address assignment direction for the destination mobile terminal to the anchor node;* Hancock discloses having a anchor node 8 and 9 fig. 1. However, Hancock does not disclose address assignment direction transmitter configured to transmit an address assignment direction for the destination mobile terminal to the anchor node. Inoue et al. discloses having a DHCP server 7 that sends a address through a DHCPREQUEST message (column 13 line 25-33). It is inferred the DHCP have the capability to transmit the mobile computer address.

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have a communication network 1 as taught by Hancock with a DHCP server 7 transmitting address request as taught by Inoue et al. to provide a mechanism that will efficiently manages address for the mobile terminal moving throughout the system.

*and the address manager of the anchor node manages the first addresses, the second addresses and the third addresses of the destination mobile terminal and the encapsulation information, in accordance with the address assignment direction.*

Hancock discloses having a anchor node 8 and 9 in fig. 1. However, Hancock does not explicitly disclose anchor node manages the first addresses, the second addresses and the third addresses of the destination mobile terminal and the encapsulation information, in accordance with the address assignment direction. Soliman discloses having a MAP ( mobile anchor point) allocating the mobile node a RcoA ("second address") and LcoA addresses ( "third address",page 15 paragraph 6.1 line 3-4).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have anchor node 8 as taught by Hancock et al. allocating a RcoA ("second address") and LcoA addresses ( "third address") as taught by Soliman to easily manage addresses that are local to visiting network.

**13. Claims 12 and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue et al. ( US Patent 7,020,120) in view of Leung (6,636,498) and Hancock ( GB 2377892 A).

**With regard to claim 12**, Inoue et al. discloses having a *network management server in a mobile communication network for transferring a packet to a destination mobile terminal via an anchor node, the mobile terminal being connected to a mobile node via a radio link, the mobile node being connected to a destination access node via a radio link*, Inoue et al. discloses having a DHCP server in fig.4 ("network management server")... However, Inoue et al. does not explicitly discloses having a anchor node and the destination mobile terminal being connected to a mobile node via a radio link, the mobile node being connected to a destination access node via a radio link. Hancock discloses having an anchor node 8 and 9 in fig.1. Leung discloses having a mobile router ( "mobile node") in a Mobile IP environment 202... the mobile router ( "mobile node") is connected to a node ( " mobile terminal")...the mobile router ( "mobile node") is connected to a foreign agent 212 ( "destination access node", fig 2A-4).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have a Mobile IP communication system as taught by Inoue et al. with a and anchor node 8 as taught by Hancock and a mobile router ("mobile node") connected to a node ( " mobile terminal") and the mobile router ("mobile node") connected to foreign agent 212 ( "destination access node") as taught by Leung to provide a system to support a Mobile IP system.

*the server comprising: an address manager configured to manage a first address, a second address and a third address of a new mobile terminal and encapsulation information for specifying the mobile node, in accordance with address assignment information for the new mobile terminal received from the mobile node; ; Inoue et al. discloses having a address management server or DHCP server utilizing moving detection processes whereby managing the different addresses for the mobile computer 2 as it move from different networks ( column 11 line 55-67 and column 12 line 1-67).*

*and an address assignment direction transmitter configured to transmit an address assignment direction for directing a source access node to manage the first address and the second address of the new mobile terminal, and to transmit an address assignment direction for directing the anchor node to manage the second address and the third address of the new mobile terminal and the encapsulation information, a source mobile terminal being connected to the source access node. Inoue et al. discloses having a DHCP server 7 that sends an address through a DHCPREQUEST*

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message (column 13 line 25-33). It is inferred the DCHP have the capability to transmit the mobile computer address. However, Inoue et al. does not disclose having a address assignment direction for directing the anchor node to manage the second address and the third address of the destination mobile terminal and the encapsulation information. Hancock discloses having anchor nodes 8 and 9 (fig.1) in a communication network 1 comprise an access network 2 operating with the Internet 3 ( page 2 line 23-25)...packets for the mobile node 4 ("destination mobile terminal") are sent to the anchor node 8 ("anchor node", page 4 line 8-9).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have a DCHP server 7 sends an address through a DCHPREQUEST message as taught by Inoue et al. transmitting the address to information to anchor node 8 as taught by Hancock to provide a mechanism that will efficiently manages addresses for a mobile terminal moving throughout the network.

**With regard to claim 13**, Inoue et al. discloses having a *network management server in a mobile communication network for transferring a packet to a destination mobile terminal via an anchor node, the destination mobile terminal being connected to a mobile node via a radio link, the mobile node being connected to a destination access node via a radio link*, Inoue et al. discloses having a DCHP server in fig.4 ("network management server")... However, Inoue et al. does not explicitly disclose having a anchor node and the destination mobile terminal being connected to a mobile node via a radio link, the mobile node being connected to a destination access node via a radio

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link. Hancock discloses having an anchor node 8 and 9 in fig.1. Leung discloses having a mobile router ( "mobile node") in a Mobile IP environment 202... the mobile router ( "mobile node") is connected to a node ( " mobile terminal")...the mobile router ( "mobile node") is connected to a foreign agent 212 ( "destination access node", fig 2A-4).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have a Mobile IP communication system as taught by Inoue et al. with a and anchor node 8 as taught by Hancock and a mobile router ("mobile node") connected to a node ( " mobile terminal") and the mobile router ("mobile node") connected to foreign agent 212 ( "destination access node") as taught by Leung to provide a system to support a Mobile IP system.

*the server comprising: an address manager configured to manage a first address, a second address and a third address of the destination mobile terminals and encapsulation information for specifying the mobile node in accordance with address assignment information received from the mobile node;* Inoue et al. discloses having a address management server or DHCP server utilizing moving detection processes whereby managing the different addresses for the mobile computer 2 as it move from different networks ( column 11 line 55-67 and column 12 line 1-67).

*and an address assignment direction transmitter configured to transmit an address assignment direction for directing the anchor node to manage the second address and the third address of the destination mobile terminal and the encapsulation information.* Inoue et al. discloses having a DHCP server 7 that sends an address

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through a DCHPREQUEST message (column 13 line 25-33). It is inferred the DCHP have the capability to transmit the mobile computer address. However, Inoue et al. does not disclose having a address assignment direction for directing the anchor node to manage the second address and the third address of the destination mobile terminal and the encapsulation information. Hancock discloses having anchor nodes 8 and 9 (fig.1) in a communication network 1 comprise an access network 2 operating with the Internet 3 ( page 2 line 23-25)...packets for the mobile node 4 ("destination mobile terminal") are sent to the anchor node 8 ("anchor node", page 4 line 8-9).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have a DCHP server 7 sends an address through a DCHPREQUEST message as taught by Inoue et al. transmitting the address to information to anchor node 8 as taught by Hancock to provide a mechanism that will efficiently manages addresses for a mobile terminal moving throughout the network.

**14. Claims 14 and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hancock ( GB 2377892 A) in view of Leung (6,636,498).

**With regard to claim 14**, Hancock discloses having an *access node in a mobile communication network for transferring a packet to a destination mobile terminal via an anchor node, the destination mobile terminal being connected to a mobile node via a radio link, the mobile node being connected to a destination access node via a radio link*, Hancocok discloses having communication network 1 includes a access nodes or

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routers 5 and 6 ( Abstract and fig. 1) ...transferring packets to a mobile node 4 ( "mobile terminal") via anchor node 8 ("anchor node", page 4 line 11-24 and page 5 line 1-2) which is sent over a wireless link (" radio link"). However, Hancock et al. does not explicitly disclose the destination mobile terminal being connected to a mobile node via a radio link, the mobile node being connected to a destination access node via a radio link. Leung discloses having a mobile router ( "mobile node") in a Mobile IP environment 202... the mobile router ( "mobile node") is connected to a node ( " mobile terminal")...the mobile router ( "mobile node") is connected to a foreign agent 212 ( "destination access node", fig 2A-4).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have a communication network 1 a as taught by Hancock with a mobile router ( "mobile node") connected to a node ( " mobile terminal") and the mobile router ("mobile node") connected to foreign agent 212 ( "destination access node") as taught by Leung to provide a system to support a Mobile IP system.

*the node comprising: an address manager configured to manage encapsulation information for specifying the mobile node;* Hancock et al. discloses having a mobile node 4 receiving an encapsulated packet and sending the packet according to the header to the destination ( page 5 line 4-9).

*and a router configured to decapsulate the packet, and to route the decapsulated packet to the mobile node specified by the encapsulation information encapsulated in the packet, when an address of the destination mobile terminal is included in the packet*

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*received from the anchor node.* Hancock et al. discloses having a access router 8 that de-encapsulate packets and route them to the mobile node 4 ( page 4 line 11-12).

Hancock further discloses anchor node 8 reading the destination address in the encapsulated packet ( page 4 line 18-24).

**With regard to claim 15,** Hancock discloses having an *anchor node in a mobile communication network for transferring a packet to a destination mobile terminal via an anchor node, the destination mobile terminal being connected to a mobile node via a radio link, the mobile node being connected to a destination access node via a radio link,* Hancock discloses having anchor nodes 8 and 9 (fig.1) in a communication network 1 comprise an access network 2 operating with the Internet 3 ( page 2 line 23-25)...packets for the mobile node 4 ("destination mobile terminal") are sent to the anchor node 8 ("anchor node", page 4 line 8-9). However, Hancock does not explicitly disclose having an anchor node and a mobile node being connected to a destination access node via a radio link. Leung discloses having a mobile router ( "mobile node") in a Mobile IP environment 202... the mobile router ( "mobile node") is connected to a node ( " mobile terminal")...the mobile router ( "mobile node") is connected to a foreign agent 212 ( "destination access node", fig 2A-4).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have a communication network 1 as taught by Hancock with a mobile router ( "mobile node") connected to a node ( " mobile terminal")

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and the mobile router ("mobile node") connected to foreign agent 212 ("destination access node") as taught by Leung to provide a system to support a Mobile IP system.

*the node comprising: an address manager configured to manage a second address and a third address of the destination mobile terminal and encapsulation information for specifying the mobile node;* Hancock discloses having an anchor node 8 managing a second and third address for a mobile node 4 ("destination terminal") and the encapsulated packets for the mobile node 4 (page 4 line 10-24).

*an address changer configured to change a destination address in the packet transmitted from a source access node, from the second address of the destination mobile terminal to the third address of the destination mobile terminal, and to encapsulate the packet using the encapsulation information, a source mobile terminal being connected to the source access node;* Hancock discloses the access router 5 changes the mobile node 4 ("mobile terminal") address when it attaches the network (page 4 line 5-8). It is inferred the access router 5 has the capability to change addresses for the mobile node 4.

*and a router configured to route the encapsulated packet to the destination access node in accordance with the encapsulation information.* Hancock et al. discloses having an access router 8 ("router") is configured to de-encapsulate the received packet and route to the mobile node 4 the encapsulated packet includes the destination address of the mobile node (page 4 line 11-16).

**15. Claims 16 and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hancock ( GB 2377892 A) in view of Watanuki et al. ( PG PUB 2002/0159478).

**With regard to claim 16**, Hancock discloses having a *mobile communication control system having a plurality of access nodes and a mobile node, wherein a source access node to which a source mobile terminal is connected via a radio link comprises: an address manager configured to manage a first address and a second address of a destination mobile terminal connected to the mobile node via a radio link*; Hancock discloses having a communication network 1 including a access nodes or routers 5 –7 (“source access node”) anchor nodes 8 and 9 and mobile nodes 4 ( Abstract and page 2 line 23-26)...the access router 5 and 7 ( “access node”) is connected to mobile node 4 ( page 3 line 1-3)...the access router 5 and 6 (“source access node”, manages address a fist address and second address for the mobile node 4 ( “mobile terminal”, page 4 line 6-7).

*an address changer configured to change a destination address in a packet transmitted from the source mobile terminal, from the first address of the destination mobile terminal to the second address of the destination mobile terminal*; Hancock discloses the access router 5 changes the mobile node 4 ( “mobile terminal”) address when it attaches the network ( page 4 line 5-8). It is inferred the access router 5 has the capability to change addresses for the mobile node 4.

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*and a router configured to route the packet to the mobile node in accordance with the changed destination address;* Hancock discloses having a access router 5 and 6 in which routes packet for the mobile node 4 to the anchor node 8 with the change address ( page 4 line 6-10).

*a mobile node comprise: an address manager configured to manage the first address and the second address of a destination mobile terminal; an address changer configured to change a destination address in the received packet, from the second address of the destination mobile terminal to the first address of the destination mobile terminal;* Hancock et al. discloses having a mobile node 4 (fig. 1 and page 2 line 23-26). However, Hancock does not disclose an address manager configured to manage the first address and the second address of a destination mobile terminal; an address changer configured to change a destination address in the received packet, from the second address of the destination mobile terminal to the first address of the destination mobile terminal. Watanuki et al. discloses having a ipv4/v6 mobile node ("mobile node") comprised of a movement status table 119 ("address manager") which is updated when there is movement register process 60 (" address changer", page 7 paragraph 140 line 1-18)...also the movement process portion 114 is configured to send out movement detection message which includes the new address destination address ( page 7 paragraph 126-136 and fig. 1). In addition, Watanuki et al. discloses having ipv6 packet transmission portion 113 ("packet transmitter") thereby transmitting packets for the ipv4/v6 mobile node who has move to a new network and the packets are destined for a

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new network address which is encapsulated in the header of the packet ( page 9 paragraph 172-181).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have mobile node 4 as taught by Hancock et al. with a movement status table 119 ("address manager") and movement register process 60 ("address changer") as taught by Watanuki et al to provide a technique that will manage the addresses the mobile terminal use throughout the network.

Hancock does not explicitly disclose having a *packet transmitter configured to transmit the packet to the destination mobile terminal in accordance with the changed destination address*; Watanuki et al. discloses having a IPv4/v6 mobile node 106 fig.1 with a IPv6 packet transmitter 113 ("packet transmitter").

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have mobile node 4 as taught by Hancock with a a IPv6 packet transmitter 113 ("packet transmitter") as taught by Watanuki et al. to provide a transmitting device that will efficiently route the packets to the proper mobile terminal.

**With regard to claim 17**, in combination Hancock and Watanuki et al. teaches the communication control system recited in claim 16. *wherein a destination access node to which the mobile node is connected via a radio link comprises an address*

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*assigner configured to assign a predetermined address area to the mobile node in accordance with an address assignment request transmitted from the mobile node, the predetermined address area being selected from among address areas assigned to the destination access node;* Hancock discloses having a access router 5 to 7 ( "destination access node") in a communication network 1 comprises an access network 2. Hancock further discloses the access router 5 and 6 ("source access node", manages address a first address and second address for the mobile node 4 ( "mobile terminal", page 4 line 6-7).

*and the address manager of the mobile node assigns a second address of a new mobile terminal included in the predetermined address area in accordance with an address assignment request transmitted from the new mobile terminal, so as to manage a first address and the second address of the new mobile terminal.* Watanuki et al. discloses having a ipv4/v6 mobile node ("mobile node") comprised of a movement status table 119 ("address manager") which is updated when there is movement register process 60 ( page paragraph 140 line 1-18)... also the movement process portion 114 is configured to send out movement detection message which includes the new address destination address ( page 7 paragraph 126-136 and fig. 1). In addition, Watanuki et al. discloses having ipv6 packet transmission portion 113 ( "packet transmitter") thereby transmitting packets for the ipv4/v6 mobile node who has move to a new network and the packets are destined for a new network address which is encapsulated in the header of the packet ( page 9 paragraph 172-181).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have a mobile node 4 as taught by Hancock with a movement status table 119 ("address manager") as taught by Watanuki et al. to efficiently manage the addresses for the mobile terminal moving throughout the network.

**17. Claim 18** is rejected under 35 U.S.C. 103(a) as being unpatentable over Watanuki et al. (PG PUB 2002/0159478) in view of Momona (US Patent 7,203,492).

**With regard to claim 18**, Watanuki et al. discloses having a *mobile node in a mobile communication network for transferring a packet to a destination mobile terminal connected to a mobile node via a radio link, the mobile node being connected to a destination access node via a radio link*; Watanuki et al. discloses having a IPv4/v6 mobile node 106 ( "mobile node", fig. 1 ) in a IP network in a network system transferring packet to either a IPv4 node 103 ( "destination mobile terminal") or a IPv6 node 104( " destination mobile terminal" page 22 paragraph 317) connected to the IPv4/v6 mobile node 106 ( fig. 1)... IPv4/v6 mobile node 106 is connected to IPv4 mobile agent 108 ("destination access node") after moving from LAN-a to LAN-b ( page 11 paragraph 200).

*the node comprising: an address manager configured to manage a first address and a second address of the destination mobile terminal*; Watanuki et al. discloses having a ipv4/v6 mobile node ( "mobile node") comprised of a movement status table 119

("address manager") which is updated when there is movement register process 60 (page paragraph 140 line 1-18)...also the movement process portion 114 is configured to send out movement detection message which includes the new address destination address (page 7 paragraph 126-136 and fig. 1).

*address changer configured to change a destination address in the packet transmitted from a source access node, from the second address of the destination mobile terminal to the first address of the destination mobile terminal, a source mobile terminal being connected to the source access node;* Watanuki et al. discloses having IPv4 node ("source mobile terminal") connected to a IPv4 mobile agent ("source access node"). However, Watanuki et al. does not disclose address changer configured to change a destination address in the packet transmitted from a source access node, from the second address of the destination mobile terminal to the first address of the destination mobile terminal, Momona discloses having a visiting mobile node MN-1 ("destination terminal") receiving a multicast packet from the home agent ("source access node") change the destination address to HLMC-1 (Home local multicast address, "first address"). It is inferred the visiting mobile node MN-1 ("destination terminal") receives a multicast packet from the home agent and changes and changes the HMLC-1 as the destination address.

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have IPv4/v6 mobile node 106 ("mobile node") as taught by Watanuki et al. changing the destination address HLMC-1 within a multicast

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packet as taught by Momona to provide a mechanism that will track the exact location for the mobile terminal.

*and a packet transmitter configured to transmit the packet to the destination mobile terminal in accordance with the changed destination address; Watanuki et al. discloses having IPv6 packet transmission portion 113 ( "packet transmitter") that will transmitting packets for the IPv6 node ("destination mobile terminal", )*

*and wherein the address manager assigns a second address of a new mobile terminal included in a predetermined address area assigned by the destination access node in accordance with an address assignment request transmitted from the new mobile terminal, so as to manage a first address and the second address of the new mobile terminal. Watanuki et al. discloses having a ipv4/v6 mobile node ( "mobile node") comprised of a movement status table 119 ("address manager") which is updated when there is movement register process 60 ( page paragraph 140 line 1-18)...also the movement process portion 114 is configured to send out movement detection message which includes the new address destination address ( page 7 paragraph 126-136 and fig. 1).*

**18. Claim 19** is rejected under 35 U.S.C. 103(a) as being unpatentable over O'Neil et al. (PG PUB 2003/0224758) and in view of Leung (US Patent 6,636,498).

**With regard to claim 19,** O' Neil et al. discloses having an *access node in a mobile communication network for transferring a packet to a destination mobile terminal*

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*connected to a mobile node via a radio link, the mobile node being connected to a destination access node via a radio link; O'Neil discloses having a access node 12 ("access node") fig. 1 in a mobile communication network ( page 1 paragraphs 3 line 1)...*

connected to a end node 14 in fig.6...the end node may be used as a mobile terminal (MT , "destination mobile terminal" , page 4 paragraph 41)...a mobile node ( mobile node") supported by a mobility agent ( "destination access node" , page 4 paragraph 43 line 1)... the interconnectivity in the network is provide through network links (" radio link", page 5 paragraph 5 line 1-9).

*the node comprising: an address assigner configured to assign a predetermined address area to the mobile node in accordance with an address assignment request transmitted from the mobile node, the predetermined address area being selected from among address areas assigned to the destination access node. O'Neil discloses having a access node 12 in fig. 1 ( "access node") . However, O'Neil does not explicitly disclose having an address assigner configured to assign a predetermined address area to the mobile node in accordance with an address assignment request transmitted from the mobile node, the predetermined address area being selected from among address areas assigned to the destination access node. Leung discloses having a home agent ("access node") assigning a care-of- address ("address") to a mobile router (" mobile node") in accordance request for a address ("address")...network associated with the mobile router ( "mobile node") is identified by the home agent ( "destination access node" column 9 line 27-67)*

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have access node 12 ("access node") as taught by O'Neil assigning addresses to a mobile router ("mobile node") as taught by Leung to provide a system that prevent unauthorized user in the visiting network.

**19. Claim 20** is rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue et al. ( US Patent 7,020,120) in view of Leung ( US Patent 6,636,498).

**With regard to claim 20**, Inoue et al. discloses having a *network management server in a mobile communication network for transferring a packet to a destination mobile terminal connected to a mobile node via a radio link, the mobile node being connected to a destination access node via a radio link*, Inoue et al. discloses having a Mobile IP communication scheme in a communication system 1 ("mobile communication network", column 5 line 48-51)...the communication system 1 comprise a DHCP server 7 ( column 7 line 49). It is inferred the communication system 1 has the capability to transfer packets. Inoue et al. further discloses having a mobile computer 2 ("mobile terminal" column 7 line 62). However, Inoue et al. does not explicitly disclose mobile terminal connected to a mobile node via a radio link, the mobile node being connected to a destination access node via a radio link. Leung discloses having a mobile router ( "mobile node") in a Mobile IP environment 202... the mobile router ( "mobile node") is connected to a node ( " mobile terminal")...the mobile router ( "mobile node") is connected to a foreign agent 212 ( "destination access node", fig 2A-4).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have a Mobile IP communication scheme in a communication system 1 with a DHCP server as taught by Inoue et al. with a mobile router ( "mobile node") connected to a node ( " mobile terminal") and the mobile router ("mobile node") connected to foreign agent 212 ( "destination access node") as taught by Leung to provide a system to support a Mobile IP system.

*wherein the network management server manages all addresses of a plurality of destination mobile terminals connected to the mobile node via radio links.* Inoue discloses having a DHCP server 7 managing address of the mobile computer 2 (column 7 line 49-58).

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DeWanda Samuel whose telephone number is (571) 270-1213. The examiner can normally be reached on Monday- Thursday 8:30-5:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Q. Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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DeWanda Samuel  
7/25/2007

  
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